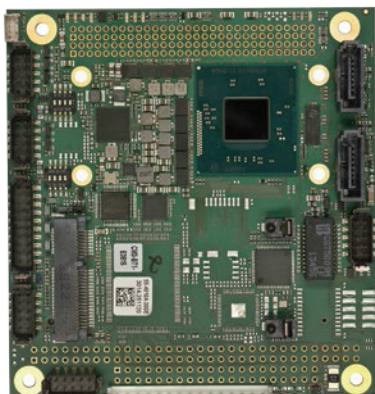


CM3-BT4

Extreme Rugged™, PCI-104 Single Board Computer with Intel® Atom™ Processor System-on-Chip

NEW



Features

- Quad-core Intel® Atom™ Processor System-on-Chip
- Up to 4GB DDR3L at 1333MHz
- Supports VGA and LVDS
- GbE (optional 2x GbE)
- 1x SATA 3Gb/s (optional 2x SATA), 1x USB 3.0 + 2x USB 2.0, 8x GPIO
- Extreme Rugged™ operating temperature: -40°C to +85°C
- Supports Smart Embedded Management Agent (SEMA) functions

Specifications

Core System

CPU Quad-core Intel® Atom™ Processor System-on-Chip Atom™ E3845 (4C), 1.91 GHz, 542/792 (Turbo), 10W
 Supports : single, dual or quad Out-of-Order Execution (OOE) processor cores, Intel® VT-x, Intel® SSE4.1 and SSE4.2, Intel® 64 architecture, IA 32-bit, PCLMULQDQ Instruction DRNG, Intel® Thermal Monitor (TM1 & TM2)

Note: Availability of features may vary between processor SKUs.

Memory Up to 4GB DDR3L-1066/1333 MHz DDR3L SO-DIMM

Embedded BIOS AMI EFI with CMOS backup in 8MB SPI BIOS

Cache Primary 32 KiB, 8-way L1 instruction cache and 24 KiB, 6-way L1 write-back data cache

Expansion Busses Ordering options for PCI-104 (PCI)

SEMA Board Controller Supports: Voltage/Current monitoring, Power Sequence debug support, AT/ATX mode control, Logistics and Forensic information, Flat Panel Control, General Purpose I²C, Failsafe BIOS (dual BIOS), Watchdog Timer and Fan Control

Debug Headers 40-pin multipurpose flat cable connector

Note: Use in combination with DB-40 debug module providing BIOS POST code LED, BMC access, SPI BIOS flashing, Power Testpoints, Debug LEDs

Video

GPU Feature Support 7th generation Intel® graphics core architecture with four execution units
 Supporting two independent displays
 3D graphics hardware acceleration
 Support for DirectX 11, OCL 1.1, OGL ES Halt/2.0/1.1, OGL 3.2
 Video decode hardware acceleration including support for H.264, MPEG2, MVC, VC-1, WMV9 and VP8 formats
 Video encode hardware acceleration including support for H.264, MPEG2 and MVC formats

LVDS Single/dual channel 18/24-bit LVDS from eDP

VGA Yes

Audio

Chipset Intel® HD Audio integrated in SOC

Audio Codec ALC886

Ethernet

Intel® MAC/PHY Interface 1x Intel® i210 (MAC/PHY) Ethernet controller (optional 2x GbE)
 10/100/1000 GbE connection

I/O Interfaces

USB 3x USB 2.0 (1x on mSATA) + 1x USB 3.0

SATA 1x SATA 3Gb/s shared with mSATA (optional 2nd SATA 3GB/s port w/o mSATA support)

eMMC Optional soldered, bootable eMMC flash storage 8 GB

GPIO 8x

Serial 2x RS-232/485 (with full handshake)

Optional: 2x RS-232/485 (with full handshake) + 2x RS-232/485 (TX,RX,CTS,RTS only)

LPC

LPC UART NCT5104D (Nuvoton)

Power

Standard Input ATX = 5V±5% / 5Vsb ±5%

AT = 5V±5%

Management ACPI 5.0 compliant

Power States C1-C6, S0, S3, S4, S5 (Wake on USB S3/S4, Wake on LAN S3/S4/S5)

ECO mode Supports deep S5 (ECO mode) for power saving

Mechanical and Environmental

Form Factor PCI-104 Version 2.3

Dimension 90 mm x 96 mm

Operating Temperature Standard: 0°C to +60°C

Extreme Rugged™: -40°C to +85°C

Humidity 5-90% RH operating, non-condensing

5-95% RH storage (and operating with conformal coating)

Shock and Vibration IEC 60068-2-64 and IEC-60068-2-27

MIL-STD-202F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D

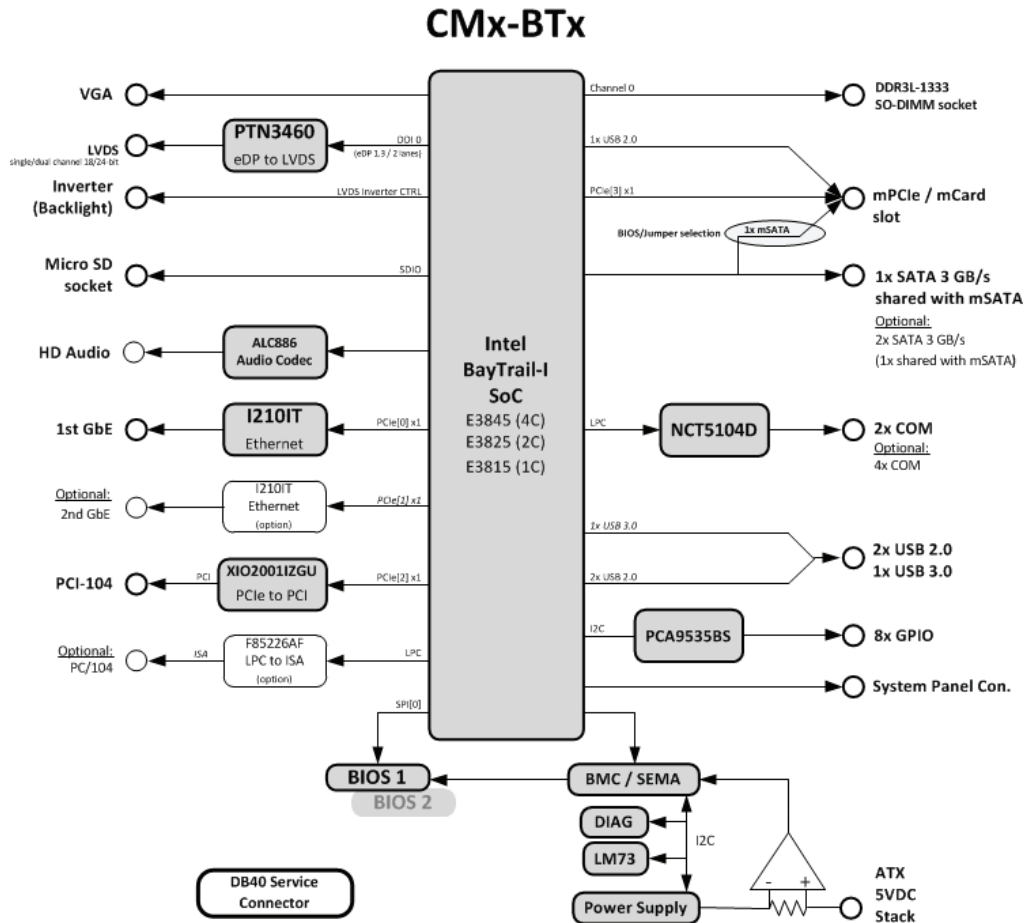
HALT Thermal Stress, Vibration Stress, Thermal Shock and Combined Test

Operating Systems

Standard Support Windows 7/8 32/64-bit, Linux 32/64-bit

Extended Support (BSP) WES7/8, WEC7, Linux, QNX, VxWorks

Functional Diagram



Ordering Information

Modules

Model Number	Description/Configuration
CM3-BT4-E3845	PCI-104, Atom E3845 (4C), 1.91 GHz, incl. heat spreader, Standard operating temperature: 0°C to +60°C

Accessories

Model Number	Description/Configuration
tbd	ETT screening -40°C to +85°C
CMx-BTx-X-10	CMx-BTx cable kit
CMx-BTx-TM-10	Passive low profile heatsink for CMx-BTx
CMx-BTx-TM-20	Active low profile heatsink for CMx-BTx (with fan)
DDR3L memory	Verified 2GB, 4GB DDR3L SODIMM memory available

CMx-BTx Standard Variant Comparison

Model Number	CM1-BT1-E3815	CM2-BT2-E3825	CM3-BT4-E3845	CM3-BT1-E3815
Form factor	PC/104	PC/104-Plus	PCI-104	PCI-104
PCI Bus (PCI-104)	No	Yes	Yes	Yes
ISA Bus (PC/104)	Yes	Yes	No	No
CPU	E3815	E3825	E3845	E3815
CPU cores	1	2	4	1
VGA	1x	1x	1x	1x
LVDS	1x	1x	1x	1x
SATA	config 1: 2, config 2: 1	config 1: 2, config 2: 1	config 1: 2, config 2: 1	config 1: 1, config 2: 0
mSATA	0, 1	0, 1	0, 1	0, 1
mPCIe	1, 0	1, 0	1, 0	1, 0
MicroSD card slot	1x	1x	1x	0x
GbE	2x	2x	2x	1x
COM	4x	4x	4x	2x
GPIO	8x	8x	8x	8x
HD Audio	1x	1x	1x	1x
USB 2.0	3x	3x	3x	3x
USB 3.0	1x	1x	1x	1x